

Pioneer Mobile Home Park LLC (PWS 3370035)
SOURCE WATER ASSESSMENT OPERATOR REPORT

May 17, 2004



State of Idaho
Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment is based on a land use inventory of the designated assessment area, sensitivity factors associated with the wells, and aquifer characteristics.

This report, *Source Water Assessment for the Pioneer Mobile Home Park LLC*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The Pioneer Mobile Home Park LLC drinking water system (PWS 3370035) consists of five ground water well sources: Well #1, Well #2, Well #3, Well #4, and Well #5.

Final susceptibility scores are derived from equally weighting system construction scores, hydrologic sensitivity scores, and potential contaminant/land use scores. Therefore, a low rating in one or two categories coupled with a higher rating in other categories results in a final rating of low, moderate, or high susceptibility. With the potential contaminants associated with most urban and heavily agricultural areas, the best score a well can get is moderate. Potential contaminants are divided into four categories, inorganic contaminants (IOCs, e.g. nitrates, arsenic), volatile organic contaminants (VOCs, e.g. petroleum products), synthetic organic contaminants (SOCs, e.g. pesticides), and microbial contaminants (e.g. bacteria). As different wells can be subject to various contamination settings, separate scores are given for each type of contaminant.

In terms of total susceptibility, Well #1, Well #2, Well #4, and Well #5 rated high for IOC, SOC, VOC, and microbial contaminants. The detections of nitrate over the maximum contaminant level (MCL) in the water from Well #1 and Well #2 resulted in an automatic high rating for the IOC category for both wells. The detection of di(2-ethylhexyl)-phthalate (an SOC) in Well #5 resulted in an automatic high rating for the SOC category for the well. Well #3 rated moderate for IOC, SOC, VOC, and microbial contaminants.

Nitrate was detected in Well #1 at concentrations ranging from 14.1 milligrams per liter (mg/L) on July 25, 2003 to 16.8 mg/L on November 13, 2002. The detections of nitrate exceeded the MCL of 10 mg/L. No other IOCs, VOCs, or SOCs have been detected in Well #1.

Nitrate was detected in Well #2 at concentrations ranging from 3.61 mg/L on November 13, 2002 to 10.7 mg/L on January 15, 2003. The detection of nitrate in January of 2003 was over the MCL of 10 mg/L. No other IOCs, VOCs, or SOCs have been detected in Well #2.

Nitrate detections in Well #3 have ranged from several non-detects to 0.02 mg/L. There have been no nitrate detections that have exceeded the MCL in Well #3. Barium, fluoride, and nitrite have also been detected in Well #3 at concentrations less than the corresponding MCLs. Sodium has been detected at a concentration of 168 mg/L on September 22, 2003. Currently, there is no MCL for sodium in drinking water. No other IOCs, VOCs, or SOCs have been detected in Well #3.

There have been no detections of nitrate in Well #4. Barium and fluoride have been detected in Well #4 at concentrations less than the corresponding MCLs. Sodium has been detected at a concentration of 184 mg/L on June 15, 2003. Currently, there is no MCL for sodium in drinking water. Cyanide was detected in Well #4 on June 15, 2003 at a concentration of 0.012 mg/L. The MCL for cyanide is 0.2 mg/L. No other IOCs, VOCs, or SOCs have been detected in Well #4.

There have been no detections of nitrate in Well #5. Barium and fluoride have been detected in Well #5 at concentrations less than the corresponding MCLs. Sodium has been detected at a concentration of 160 mg/L. Currently, there is no MCL for sodium in drinking water. Di(2-ethylhexyl)-phthalate (an SOC) was detected in Well #5 on August 28, 2003 at a concentration of 0.8 micrograms per liter (µg/L). The MCL for di(2-ethylhexyl)-phthalate is 6 µg/L. No other IOCs, VOCs, or SOCs have been detected in Well #5.

The water system has had eight repeat bacteria detections within the distribution system. Two repeat detections occurred on the following dates: September 2, 2003; October 1, 2003; and October 31, 2003. One repeat detection occurred on August 29, 2003 and on October 2, 2003. No bacteria detections have occurred within the wells.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources. If the system should need to expand in the future, new well sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use.

For the Pioneer Mobile Home Park LLC, drinking water protection activities should focus on evaluating possible sources of contamination such as those identified in this assessment. Any spills from the potential contaminant sources listed in Table 1 should be carefully monitored, as should any future development in the delineated areas. Other practices aimed at reducing the leaching of agricultural chemicals from agricultural land within the designated source water areas should be implemented. No chemicals should be stored or applied within the 50-foot radius of the wellhead.

Partnerships with state and local agencies and industry groups should be established and are critical to success. Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineations are near residential land use areas. Public education topics could include proper lawn and garden care practices, household hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service. Due to bacteria concerns, the water system may want to consider developing a disinfection plan for the wells and distribution system. Contact the Idaho Department of Environmental Quality Drinking Water Coordinator to inquire about disinfecting options suitable for

the size of the water system.

A water system must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Boise Regional Office of the DEQ or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR PIONEER MOBILE HOME PARK LLC, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings, used to develop this assessment, is also attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess the over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the wells, and aquifer characteristics. All assessments for sources active prior to 1999 were completed by May of 2003. Source Water Assessments (SWAs) for sources activated post-1999 are being developed on a case-by-case basis. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The ultimate goal of this assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The DEQ recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. The DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or drinking water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The Pioneer Mobile Home Park LLC wells serve approximately 53 people through 21 connections. The wells are located in Owyhee County, to the southeast of Homedale (Figure 1). The public drinking water system for the Pioneer Mobile Home Park LLC is currently comprised of five wells: Well #1, Well #2, Well #3, Well #4, and Well #5.

Six IOC contaminants have been detected in the Pioneer Mobile Home Park LLC public water system: nitrate, fluoride, sodium, barium, nitrite, and cyanide. Detections of nitrate have exceeded the MCL in Well #1 and Well #2. The remaining concentrations of IOC detected have been below MCL standards. Well #5 has had a detection of di(2-ethylhexyl)-phthalate (an SOC), which was below the MCL. The water system has had eight repeat bacteria detections within the distribution system. No bacteria have been detected in the wells. No other IOCs, SOCs, or VOCs have been detected in the water. However, the county herbicide and total agricultural chemical usage is high, which are potential sources of SOCs and VOCs.

Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ used a refined analytical element computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water associated with the Northern Owyhee aquifers in the vicinity of the Pioneer Mobile Home Park LLC. The computer models used site specific data, assimilated by DEQ from a variety of sources including the Pioneer Mobile Home Park LLC well logs, other local area well logs, and hydrogeologic reports detailed below.

Site Hydrogeology

Located in southwestern Idaho, Pioneer Mobile Home Park is approximately one-quarter mile south of the Snake River. The site is located on the Idaho Formation, a thick sedimentary sequence of clay, sand, silt, gravel and shale. At the site, clay is the most abundant material encountered in all of the wells. The clay layers are stratified by gravel and sand layers, with an occasional shale layer in between. There are no distinct grading sequences in the stratigraphy on the site. These alluvial materials that make up the Idaho Formation form thin layers (1 to 20 feet thick) of the facies mentioned above.

The ground water of the area is located in two primary aquifers, a shallow and a deep. Given the water levels and the water bearing zones for the five wells delineated in this study, only the upper aquifer was modeled as it is suspected that all five of these wells are completed in this aquifer. The five wells range in depths from 40 feet deep to 340 feet deep. Water bearing zones were encountered in the wells ranging from 21' to 70'. The most common water bearing material encountered in all of the wells is gravel. The water levels in the wells are shallow, indicating the ground water is in direct hydraulic connection with the river. The depth to water in the wells ranges from 13' to 17' below ground surface.

The delineated source water assessment areas for the Pioneer Mobile Home Park LLC wells can best be described as a corridor, approximately 0.9 mile wide and 1.4 miles long, extending to the southeast (Figure 2). The Snake River was used as a constant flux boundary to the east of the wells in the model. The actual data used by DEQ in determining the source water assessment delineation areas are available upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and the Pioneer Mobile Home Park LLC and from available databases.

Land use within the immediate area of the wellhead consists of residential and agricultural uses. The dominant land use outside the immediate area is irrigated agriculture. Roadways, railroad tracks, and irrigation canals also run through the area.

It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used at the facility. Many potential sources of contamination are regulated at the federal level, state level, or both, to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, such as educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted during January of 2004. The first phase involved identifying and documenting potential contaminant sources within the Pioneer Mobile Home Park LLC Assessment Area through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ. The second or enhanced phase of the contaminant inventory involved contacting the operator to validate the sources identified in phase one and to add any additional potential sources in the area.

The DEQ computer database search revealed no potential contaminant sources within the Pioneer Mobile Home Park LLC public water system delineation. There are roadways, railroad tracks and irrigation canals that cross the delineation (Figure 2). If an accidental spill occurred in any of these sources, IOCs, VOCs, SOCs, or microbial contaminants could be added to the aquifer system (Table 1). County level herbicide and total agricultural chemical use is high, which are potential sources for SOCs and VOCs. In addition, the delineation crosses priority areas for the IOCs nitrate and arsenic, and for the SOCs atrazine and alachlor.

Table 1. Pioneer Mobile Home Park LLC, Wells #1 - #5, Potential Contaminant Inventory

Map ID #	Source Description	TOT Zone ¹ (years)	Source of Information	Potential Contaminants ²
	Railroad Tracks	0-10	GIS Map	IOC, VOC, SOC, Microbes
	Irrigation Canals	0-10	GIS Map	IOC, VOC, SOC, Microbes
	Roads	0-10	GIS Map	IOC, VOC, SOC, Microbes

¹ TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead

² IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Section 3. Susceptibility Analyses

The water system's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Appendix A contains the susceptibility analysis worksheets. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination. A lower hydrologic sensitivity score implies a system is less vulnerable to contamination.

The hydrologic sensitivity was rated high for all of the wells (Table 3). The soils are predominantly moderately to well drained, which increases the hydrologic sensitivity score. Well #2 and Well #4 have mainly gravel in the vadose zone, which increases the hydrologic sensitivity score. Well #3 and Well #5 have mainly clay in the vadose zone, which decreases the hydrologic sensitivity score. The depth to ground water for Well #2, Well #3, Well #4, and Well #5 is less than the 300 feet required to achieve a lower score. The depth to first encountered ground water varies from 21 feet in Well #2 to 70 feet in Well #5. Well #2 has 4 feet of fine-grained sediments, Well #3 has 9 feet of fine-grained sediments, Well #4 has 22 feet of fine-grained sediments, and Well #5 has 19 feet of fine-grained sediments; all less than the required 50 feet to achieve a lower score. The hydrologic sensitivity worksheet for each well is included in Appendix A.

The well log for Well #1 is not available, so a conservative approach was used and the highest score for each criteria was assumed. The hydrologic sensitivity ranking may change if information from the well log becomes available. For Well #1 the vadose zone is unknown, and it is assumed that the depth of ground water is less than 300 feet and that there is no fine-grained zone above the producing zone of the well. The hydrologic sensitivity worksheet for each well is included in Appendix A.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in Sanitary Surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced.

The Pioneer Mobile Home Park LLC drinking water system consists of five wells that extract ground water for community uses. All wells were rated as moderate susceptibility for well system construction (Table 3). The well system construction worksheet for each well is included in Appendix A. Well log information for Well #2, Well #3, Well #4, and Well #5 is summarized below in Table 2.

Table 2 displays the open intervals for Well #2, Well #3, Well #4, and Well #5. The top of the open interval is less than 100 feet below the static water level for each of the 4 wells. The surface seal for Well #4 and Well #5 extend into gravel and sand layers, which are not low permeability units (Table 2). The casing and surface seals of Well #2 and Well #3 extend into clay layers, which decreases the wells system construction scores. The 2002 sanitary survey indicated that all of the wells had surface seals and wellheads that were maintained in good condition and were protected from flooding, which decreased the wells system construction scores.

There was not a well log available for Well #1, and it is assumed that the casing and annular seal do not extend into a low permeability unit, that the highest production interval of the wells are less than 100-feet below the static water level, and that IDWR well construction standards are not met. All of these conditions increased the system construction score. The well construction score could change if information from the well log is made available.

Table 2. Pioneer Mobile Home Park LLC Well Construction Summary Information

Well	Well Depth (ft)	Water Table Depth (ft)	Casing: diameter/ thickness (in)	Casing: depth (ft)/ formation	Surface seal: depth (ft)/ formation	Screened Interval (ft)	Drill Year	Sanitary Survey Elements (A/B) ¹
Well #2	40	14	6/0.250	32/Blue Clay	18/Brown Clay	open hole 32 - 40	1975	Yes/Yes
Well #3	280	13	6/0.250	38/Blue Clay	38/Blue Clay	open hole 38 - 280	1993	Yes/Yes
Well #4	190	16	6/0.250	47/Blue Clay	18/Gravel	open hole 47 – 190	1994	Yes/Yes
Well #5	340	17	6/0.250	50/Blue Clay	18/Gravel and Sand	open hole 50 – 340	1996	Yes/Yes

¹ A = Well and surface seal in compliance; B = Protected from surface flooding.

NI = no information was available

The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all PWSs to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. Table 1 of the *Recommended Standards for Water Works* (1997) states that 6-inch steel casing requires a thickness of 0.280 inches. The well logs for Well #2, Well #3, Well #4, and Well #5 indicate that the casings are 6 inches in diameter and 0.250-inches thick, which does not meet IDWR standards. The standards also state that a screen will be installed and have openings based on sieve analysis of the formation. Standard 3.2.4.1 requires all PWSs to have yield and drawdown tests that last “24 hours or until stabilized drawdown has continued for six hours at 1.5 times” the design pumping rate (IDEQ, 1997).

Potential Contaminant Source and Land Use

All of the Pioneer Mobile Home Park LLC wells rated high for IOC (e.g. arsenic, nitrate), VOCs (e.g. petroleum products), SOC (e.g. pesticides), and microbial contaminants (e.g. bacteria). Irrigated agricultural land, roadways, irrigation canals, and railroad tracks contributed to the contaminant inventory rating. In addition, county level herbicide and total agricultural chemical use is high, which are potential sources for SOC and VOCs. The delineation crosses priority areas for the IOC nitrate and arsenic, and for the SOC atrazine and alachlor. The potential contaminant source and land use worksheet for each well is included in Appendix A.

Final Susceptibility Rating

An IOC detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well, despite the land use of the area, because a pathway for contamination already exists. This is the case for Well #1, Well #2, and Well #5. Well #1 and Well #2 had detections of nitrate above the MCL, therefore the two wells are ranked automatically high for IOC. Well #5 had a detection of the SOC di(2-ethylhexyl)-phthalate, which resulted in an automatic high for SOC in Well #5. In addition, having sources within 50 feet of the wellhead gives an automatic high score for the type of contaminant in question. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0- to 3-year time-of-travel zone (Zone 1B) and a large percentage of irrigated agricultural land contribute greatly to the overall ranking. In terms of total susceptibility, Well #1, Well #2, Well #4, and Well #5 rated high for IOC, VOC, SOC and microbials (Table 3). Well #3 rated moderate for IOC, VOC, SOC, and microbials (Table 3). The SWA susceptibility worksheet for each well is included in Appendix A.

Table 3. Summary of Pioneer Mobile Home Park LLC Susceptibility Evaluation

Source	Susceptibility Scores ¹									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Wells #1 - #2	H	H	H	H	H	M	H(*)	H	H	H
Well #3	H	H	H	H	H	M	M	M	M	M
Well #4	H	H	H	H	H	M	H	H	H	H
Well #5	H	H	H	H	H	M	H	H	H(*)	H

¹H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

²H(*) = Wells rated high and automatically high due to detection of IOC over MCL or detection of SOC

Susceptibility Summary

In terms of total susceptibility, Well #1, Well #2, Well #4, and Well #5 rated high for all categories. The roads, railroad tracks, and irrigation canals contributed to the susceptibility rating. The delineation crosses priority areas for the IOCs nitrate and arsenic, and for the SOC's atrazine and alachlor, which increased the potential contaminant scores. In addition, the dominant land use of irrigated agriculture and the high county usage rate of herbicide and total agricultural chemicals also contributed to the ratings. High hydrologic sensitivity scores also contributed heavily to the overall scores. Well #3 rated moderate for IOC, VOC, SOC, and microbials. Well #3 is cased and sealed into a low permeability unit, which decreased the hydrologic sensitivity score and resulted in the moderate overall ranking.

Nitrate was detected in Well #1 at concentrations ranging from 14.1 mg/L on July 25, 2003 to 16.8 mg/L on November 13, 2002. All detections of nitrate exceeded the MCL of 10 mg/L in Well #1. Nitrate was detected in Well #2 at concentrations ranging from 3.61 mg/L on November 13, 2002 to 10.7 mg/L on January 15, 2003. The detection of nitrate in January of 2003 was over the MCL of 10 mg/L.

Nitrate detections in Well #3 have ranged from several non-detects to 0.02 mg/L on September 22, 2003. There have been no nitrate detections that have exceeded the MCL in Well #3. Barium, fluoride, and nitrite have also been detected in Well #3 at concentrations less than the corresponding MCLs. Sodium has been detected at a concentration of 168 mg/L on September 22, 2003. Currently, there is no MCL for sodium in drinking water.

There have been no detections of nitrate in Well #4. Barium and fluoride have also been detected in Well #4 at concentrations less than the corresponding MCLs. Sodium has been detected at a concentration of 184 mg/L on June 15, 2003. Currently, there is no MCL for sodium in drinking water. Cyanide was detected in Well #4 on June 15, 2003 at a concentration of 0.012 mg/L. The MCL for cyanide is 0.2 mg/L.

There have been no detections of nitrate in Well #5. Barium and fluoride have also been detected in Well #5 at concentrations less than the corresponding MCLs. Sodium has been detected at a concentration of 160 mg/L. Currently, there is no MCL for sodium in drinking water. Di(2-ethylhexyl)-phthalate (an SOC) was detected in Well #5 on August 28, 2003 at a concentration of 0.8 µg/L. The MCL for di(2-ethylhexyl)-phthalate is 6 µg/L.

No other IOCs, SOC's, or VOC's have been detected in the wells. However, the county herbicide and total agricultural chemical usage is high, which are potential sources of SOC's and VOC's. In addition, the delineation crosses priority areas for the IOCs nitrate and arsenic, and for the SOC's atrazine and alachlor.

The water system has had eight repeat bacteria detections within the distribution system. Two repeat detections occurred on the following dates: September 2, 2003; October 1, 2003; and October 31, 2003. One repeat detection occurred on August 29, 2003 and on October 2, 2003. No bacteria detections have occurred within the wells.

Section 4. Options for Drinking Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective drinking water protection program is tailored to the particular local source water protection area. A community with a fully developed drinking water protection program will incorporate many strategies. For the Pioneer Mobile Home Park LLC, drinking water protection activities should focus on evaluating possible sources of contamination such as those identified in this assessment. Any spills from the potential contaminant sources listed in Table 1 should be carefully monitored, as should any future development in the delineated areas. Other practices aimed at reducing the leaching of agricultural chemicals from agricultural land within the designated source water areas should be implemented. Chemicals should not be stored or applied within 50 feet of the wellhead. Any problems detected during sanitary surveys should be promptly addressed to protect the drinking water source from potential contaminants.

Partnerships with state and local agencies and industry groups should be established and are critical to success. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineations are near residential land use areas. Public education topics could include proper lawn and garden care practices, household hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA. There are transportation corridors near the delineations; therefore the Department of Transportation should be involved in protection activities. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A water system must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices).

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments. For assistance in developing protection strategies please contact Pamela Smolczynski in the Idaho Department of Environmental Quality Boise Regional Office at (208) 373-0461.

Water suppliers serving fewer than 10,000 persons may contact Ms. Melinda Harper, Idaho Rural Water Association, at 208-343-7001 (mlharper@idahoruralwater.com) for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund, is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 1997. "Recommended Standards for Water Works."

Idaho Department of Agriculture, 1998. Unpublished Data.

Idaho Department of Environmental Quality, 1997. Design Standards for Public Drinking Water Systems. IDAPA 58.01.08.550.01.

Idaho Department of Water Resources, 1993. Administrative Rules of the Idaho Water Resource Board: Well Construction Standards Rules. IDAPA 37.03.09.

Appendix A

Pioneer Mobile Home Park LLC Susceptibility Analysis Worksheets

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)
- 2) 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Public Water System Name: Pioneer Mobile Home Park LLC Public Water System Number: 3370035 Well Number: 1 Date: 4/15/2004 Person Conducting Assessment: Jessica Fox		Version 2.1 5/19/1999
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Hydrologic Sensitivity Worksheet

	<u>Value</u>	<u>Comments</u>
(1) Do the soils belong to drainage classes in the poorly drained through moderately well drained categories?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2
(2) Is the vadose zone composed predominantly of gravel, fractured rock; or is unknown?	<input checked="" type="radio"/> Yes <input type="radio"/> No	1 Well log not available
(3) Is the depth to first groundwater greater than 300 feet?	<input type="radio"/> Yes <input checked="" type="radio"/> No	1 Well log not available
(4) Is an aquitard present with silt/clay or sedimentary interbeds within basalt with greater than 50 feet cumulative thickness?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2 Well log not available

Hydrologic Sensitivity Score = 6

Final Hydrologic Sensitivity Ranking = High Hydrologic Sensitivity Score (5 to 6 points)

Public Water System Name: Pioneer Mobile Home Park LLC Public Water System Number: 3370035 Well Number: 1 Date: 4/15/2004 Person Conducting Assessment: Jessica Fox		Version 2.1 5/19/1999
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Source Construction Worksheet

		<u>Comments</u>
(1) Well Drill Date	Input Date 	
(2) Well Drillers Log Available?	<input type="radio"/> Yes <input checked="" type="radio"/> No	If no well log is available answers to (4) and (6) are assumed to be NO and points are added to score.
(3) Sanitary Survey Available? If Yes, for what year?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
	<div style="border: 1px solid black; padding: 2px 10px;">Year</div> <div style="border: 1px solid black; padding: 2px 10px;">2002</div>	If no sanitary survey is available answer to Questions (5) and (8) is assumed to be NO and points are added to score.
(4) Are current IDWR well construction standards being met?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
(5) Is the wellhead and surface seal maintained in good condition?	<input checked="" type="radio"/> Yes <input type="radio"/> No	1 No well log available; casing 8" above well house floor
(6) Do the casing and annular seal extend to a low permeability unit?	<input type="radio"/> Yes <input checked="" type="radio"/> No	0
(7) Is the highest production interval of the well at least 100 feet below the static water level?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2 No well log available
(8) Is the well located outside the 100 year floodplain and is it protected from surface runoff?	<input type="radio"/> Yes <input checked="" type="radio"/> No	1 No well log available
	<input checked="" type="radio"/> Yes <input type="radio"/> No	0

Source Construction Score = 4

Final Source Construction Ranking = Moderate Source Construction Score (2 to 4 points)

Potential Contaminant Source/Land Use Worksheet continued									
Zone II						IOC Score	VOC Score	SOC Score	Microbial Score
(9)	Are Contaminant Sources Present in Zone II?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Complete Step 9a					
9a	What types of chemicals?	<input checked="" type="checkbox"/> IOCs	<input checked="" type="checkbox"/> VOCs		2	2	2	0	
		<input checked="" type="checkbox"/> SOCs							
(10)	Are there Sources of Class II or III Leachable Contaminants in Zone II?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Complete Step 10a					
10a	What type of contaminant?	<input checked="" type="checkbox"/> IOCs	<input checked="" type="checkbox"/> VOCs		1	1	1	0	
		<input checked="" type="checkbox"/> SOCs							
(11)	Pick the Best Description of the Amount and Type of Agricultural Land in Zone II.	Greater Than 50 % Irrigated Agricultural Land			▼	2	2	2	0
		Zone II Subtotal				5	5	5	0

Potential Contaminant Source/Land Use Worksheet continued								
Zone III					IOC Score	VOC Score	SOC Score	Microbial Score
(12)	Contaminant Sources Present in Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No		Complete Step 12a				
12a	What types of contaminant?	<input checked="" type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs			1	1	1	0
(13)	Are there Sources of Class II or III Leachable Contaminants in Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No		Complete Step 13a				
13a	What types of contaminants?	<input checked="" type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs			1	1	1	0
(14)	Is there Irrigated Agricultural Land That Occupies > 50% of Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No			1	1	1	0
			Zone III Subtotal		3	3	3	0
					IOC Score	VOC Score	SOC Score	Microbial Score
Community and Non-Community, Non-Transient System Contaminant Source/Land Use Score					26	24	26	12
Final Community/NC-NT System Ranking			IOC Score = High Contaminant/Land Use Score (21 to 30 points)					
			VOC Score = High Contaminant/Land Use Score (21 to 30 points)					
			SOC Score = High Contaminant/Land Use Score (21 to 30 points)					
			Microbial Score = High Contaminant/Land Use Score (12 to 18 points)					

Public Water System Name: Pioneer Mobile Home Park LLC
Public Water System Number: 3370035
Well Number: 1
Date: 4/15/2004
Person Conducting Assessment: Jessica Fox

Version 2.1
 5/19/1999

SWA Susceptibility Rating Sheet

Zone IA Susceptibility Rating		Rationale for High Susceptibility in Zone IA
Warning: Due to specific conditions found in Zone IA this well has been assigned a High overall susceptibility for:	IOC Contaminants	Nitrate has been detected at concentrations greater than the MCL of 10 mg/L.
<i>This rating is based on: (1)The presence of contaminant sources in Zone IA or (2)The detection of specific SOC/VOC chemicals in the well or (3)The detection of specific IOC chemicals above MCL levels in the well.</i> <i>Public Water Systems may petition IDEQ to revise susceptibility rating based on elimination of contaminant sources or other site-specific factors.</i>		

Community and Noncommunity- Nontransient Sources	IOC Score	SOC Score	VOC Score
Hydrologic Sensitivity Score =	6	6	6
Potential Contaminant Source/Land Use Score X 0.20 =	5	5	5
Source Construction Score =	4	4	4
Total	15	15	15
FINAL WELL RANKING IOC Ranking is High (13 to 18 points) SOC Ranking is High (13 to 18 points) VOC Ranking is High (13 to 18 points)			

Comments

Microbial Susceptibility Rating	Score
Hydrologic Sensitivity Score =	6
Potential Contaminant Source/Land Use Score X 0.375 =	5
Source Construction Score =	4
Total	15
FINAL WELL RANKING Microbial Ranking is High (13 to 18 points)	

Comments

Public Water System Name: Pioneer Mobile Home Park LLC
Public Water System Number: 3370035
Well Number: 2
Date: 4/15/2004
Person Conducting Assessment: Jessica Fox

Version 2.1
5/19/1999

Hydrologic Sensitivity
Worksheet

		<u>Value</u>	<u>Comments</u>
(1) Do the soils belong to drainage classes in the poorly drained through moderately well drained categories?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2	
(2) Is the vadose zone composed predominantly of gravel, fractured rock; or is unknown?	<input checked="" type="radio"/> Yes <input type="radio"/> No	1	12' of gravel
(3) Is the depth to first groundwater greater than 300 feet?	<input type="radio"/> Yes <input checked="" type="radio"/> No	1	depth to first groundwater is 21'; SWL is 14'
(4) Is an aquitard present with silt/clay or sedimentary interbeds within basalt with greater than 50 feet cumulative thickness?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2	4' of brown clay

Hydrologic Sensitivity Score = 6

Final Hydrologic Sensitivity Ranking = High Hydrologic Sensitivity Score (5 to 6 points)

Public Water System Name: Pioneer Mobile Home Park LLC
 Public Water System Number: 3370035
 Well Number: 2
 Date: 4/15/2004
 Person Conducting Assessment: Jessica Fox

Version 2.1
 5/19/1999

Source Construction Worksheet

Comments

- | | | | | |
|--|--|----------------------------|------------------------|---|
| (1) Well Drill Date | Input Date | <div>August 25, 1975</div> | | |
| (2) Well Drillers Log Available? | <div><input checked="" type="radio"/> Yes <input type="radio"/> No</div> | | | If no well log is available answers to (4) and (6) are assumed to be NO and points are added to score. |
| (3) Sanitary Survey Available? If Yes, for what year? | <div><input checked="" type="radio"/> Yes <input type="radio"/> No</div> | <div>Year
2002</div> | | If no sanitary survey is available answer to Questions (5) and (8) is assumed to be NO and points are added to score. |
| (4) Are current IDWR well construction standards being met? | <div><input type="radio"/> Yes <input checked="" type="radio"/> No</div> | | <div>Value
1</div> | 6" casing is 0.250 inches thick, should be 0.280 inches thick. |
| (5) Is the wellhead and surface seal maintained in good condition? | <div><input checked="" type="radio"/> Yes <input type="radio"/> No</div> | | 0 | |
| (6) Do the casing and annular seal extend to a low permeability unit? | <div><input checked="" type="radio"/> Yes <input type="radio"/> No</div> | | 0 | Surface seal extends into brown clay; casing extends into blue clay. |
| (7) Is the highest production interval of the well at least 100 feet below the static water level? | <div><input type="radio"/> Yes <input checked="" type="radio"/> No</div> | | 1 | |
| (8) Is the well located outside the 100 year floodplain and is it protected from surface runoff? | <div><input checked="" type="radio"/> Yes <input type="radio"/> No</div> | | 0 | |

Source Construction Score = 2

Final Source Construction Ranking = Moderate Source Construction Score (2 to 4 points)

	Public Water System Name:	Pioneer Mobile Home Park LLC			Version 2.1			
	Public Water System Number:	3370035			5/19/1999			
	Well Number:	2						
	Date:	4/15/2004						
	Person Conducting Assessment:	Jessica Fox						
	<u>Potential Contaminant Source/Land Use Worksheet</u>							
	Land Use/Zone							
	IA							
					IOC Score	VOC Score	SOC Score	Microbial Score
(1)	Land Use (Pick the Predominant Land Type)	Irrigated Cropland ▼			2	2	2	2
(2)	Is Farm Chemical Use High or Unknown? (Answer No if (1) = Urban/Commercial)	<input checked="" type="radio"/> Yes <input type="radio"/> No			Complete Step 2a			
2a	Indicate appropriate chemical category	<input type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs			0	2	2	0
(3)	Are IOC, VOC, SOC, Microbial or Radionuclide contaminant sources Present in Zone IA? <u>OR</u> Have SOC/VOC contaminants been detected in the well? <u>OR</u> have IOC contaminants been detected above MCL levels in the well? If Yes, please check the appropriate chemical	<input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="checkbox"/> IOCs <input type="checkbox"/> VOCs <input type="checkbox"/> SOCs <input type="checkbox"/> Microbials						
					Land Use Subtotal	2	4	4
								2

Potential Contaminant Source/Land Use Worksheet continued									
Zone II						IOC Score	VOC Score	SOC Score	Microbial Score
(9)	Are Contaminant Sources Present in Zone II?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Complete Step 9a					
9a	What types of chemicals?	<input checked="" type="checkbox"/> IOCs	<input checked="" type="checkbox"/> VOCs		2	2	2	0	
		<input checked="" type="checkbox"/> SOCs							
(10)	Are there Sources of Class II or III Leachable Contaminants in Zone II?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Complete Step 10a					
10a	What type of contaminant?	<input checked="" type="checkbox"/> IOCs	<input checked="" type="checkbox"/> VOCs		1	1	1	0	
		<input checked="" type="checkbox"/> SOCs							
(11)	Pick the Best Description of the Amount and Type of Agricultural Land in Zone II.	Greater Than 50 % Irrigated Agricultural Land ▼			2	2	2	0	
		Zone II Subtotal			5	5	5	0	

Potential Contaminant Source/Land Use Worksheet continued								
Zone III					IOC Score	VOC Score	SOC Score	Microbial Score
(12)	Contaminant Sources Present in Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No		Complete Step 12a				
12a	What types of contaminant?	<input checked="" type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs			1	1	1	0
(13)	Are there Sources of Class II or III Leachable Contaminants in Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No		Complete Step 13a				
13a	What types of contaminants?	<input checked="" type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs			1	1	1	0
(14)	Is there Irrigated Agricultural Land That Occupies > 50% of Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No			1	1	1	0
			Zone III Subtotal		3	3	3	0
					IOC Score	VOC Score	SOC Score	Microbial Score
Community and Non-Community, Non-Transient System Contaminant Source/Land Use Score					26	24	26	12
Final Community/NC-NT System Ranking					IOC Score = High Contaminant/Land Use Score (21 to 30 points)			
					VOC Score = High Contaminant/Land Use Score (21 to 30 points)			
					SOC Score = High Contaminant/Land Use Score (21 to 30 points)			
					Microbial Score = High Contaminant/Land Use Score (12 to 20 points)			

Public Water System Name: Pioneer Mobile Home Park LLC
Public Water System Number: 3370035
Well Number: 2
Date: 4/15/2004
Person Conducting Assessment: Jessica Fox

Version 2.1
 5/19/1999

SWA Susceptibility Rating Sheet

Zone IA Susceptibility Rating		Rationale for High Susceptibility in Zone IA
Warning: Due to specific conditions found in Zone IA this well has been assigned a High overall susceptibility for:	IOC Contaminants	Nitrate has been detected at a concentration greater than the MCL of 10 mg/L.
<i>This rating is based on: (1)The presence of contaminant sources in Zone IA or (2)The detection of specific SOC/VOC chemicals in the well or (3)The detection of specific IOC chemicals above MCL levels in the well. Public Water Systems may petition IDEQ to revise susceptibility rating based on elimination of contaminant sources or other site-specific factors.</i>		

Community and Noncommunity- Nontransient Sources	<u>IOC Score</u>	<u>SOC Score</u>	<u>VOC Score</u>
Hydrologic Sensitivity Score =	6	6	6
Potential Contaminant Source/Land Use Score X 0.20 =	5	5	5
Source Construction Score =	2	2	2
Total	13	13	13
FINAL WELL RANKING IOC Ranking is High (13 to 18 points) SOC Ranking is High (13 to 18 points) VOC Ranking is High (13 to 18 points)			

Comments

Microbial Susceptibility Rating	<u>Score</u>
Hydrologic Sensitivity Score =	6
Potential Contaminant Source/Land Use Score X 0.375 =	5
Source Construction Score =	2
Total	13
FINAL WELL RANKING Microbial Ranking is High (13 to 18 points)	

Comments

Public Water System Name: Pioneer Mobile Home Park LLC

Public Water System Number: 3370035

Well Number: 3

Date: 4/15/2004

Person Conducting Assessment: Jessica Fox

Version 2.1

5/19/1999

Hydrologic Sensitivity
Worksheet

		<u>Value</u>	<u>Comments</u>
(1) Do the soils belong to drainage classes in the poorly drained through moderately well drained categories?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2	
(2) Is the vadose zone composed predominantly of gravel, fractured rock; or is unknown?	<input type="radio"/> Yes <input checked="" type="radio"/> No	0	20' of clay
(3) Is the depth to first groundwater greater than 300 feet?	<input type="radio"/> Yes <input checked="" type="radio"/> No	1	depth to first groundwater is 43'; SWL is 13'
(4) Is an aquitard present with silt/clay or sedimentary interbeds within basalt with greater than 50 feet cumulative thickness?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2	9' of blue clay from surface to end of casing

Hydrologic Sensitivity Score = 5

Final Hydrologic Sensitivity Ranking = High Hydrologic Sensitivity Score (5 to 6 points)

Public Water System Name: Pioneer Mobile Home Park LLC
Public Water System Number: 3370035
Well Number: 3
Date: 4/15/2004
Person Conducting Assessment: Jessica Fox

Version 2.1
5/19/1999

Source Construction Worksheet

Comments

(1) Well Drill Date	Input Date	<input type="text" value="August 25, 1975"/>		
(2) Well Drillers Log Available?	<input checked="" type="radio"/> Yes <input type="radio"/> No			If no well log is available answers to (4) and (6) are assumed to be NO and points are added to score.
(3) Sanitary Survey Available? If Yes, for what year?	<input checked="" type="radio"/> Yes <input type="radio"/> No	<div>Year <input type="text" value="2002"/></div>		If no sanitary survey is available answer to Questions (5) and (8) is assumed to be NO and points are added to score.
(4) Are current IDWR well construction standards being met?	<input type="radio"/> Yes <input checked="" type="radio"/> No	<div>Value 1</div>		6" casing is 0.250 inches thick, should be 0.280 inches thick.
(5) Is the wellhead and surface seal maintained in good condition?	<input checked="" type="radio"/> Yes <input type="radio"/> No	0		
(6) Do the casing and annular seal extend to a low permeability unit?	<input checked="" type="radio"/> Yes <input type="radio"/> No	0		Surface seal & casing extends into blue clay.
(7) Is the highest production interval of the well at least 100 feet below the static water level?	<input type="radio"/> Yes <input checked="" type="radio"/> No	1		Open hole 25' below SWL
(8) Is the well located outside the 100 year floodplain and is it protected from surface runoff?	<input checked="" type="radio"/> Yes <input type="radio"/> No	0		

Source Construction Score = 2

Final Source Construction Ranking = Moderate Source Construction Score (2 to 4 points)

Potential Contaminant Source/Land Use Worksheet continued								
Zone III					IOC Score	VOC Score	SOC Score	Microbial Score
(12)	Contaminant Sources Present in Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No		Complete Step 12a				
12a	What types of contaminant?	<input checked="" type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs			1	1	1	0
(13)	Are there Sources of Class II or III Leachable Contaminants in Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No		Complete Step 13a				
13a	What types of contaminants?	<input checked="" type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs			1	1	1	0
(14)	Is there Irrigated Agricultural Land That Occupies > 50% of Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No			1	1	1	0
			Zone III Subtotal		3	3	3	0
					IOC Score	VOC Score	SOC Score	Microbial Score
Community and Non-Community, Non-Transient System Contaminant Source/Land Use Score					26	24	26	12
Final Community/NC-NT System Ranking			IOC Score = High Contaminant/Land Use Score (21 to 30 points)					
			VOC Score = High Contaminant/Land Use Score (21 to 30 points)					
			SOC Score = High Contaminant/Land Use Score (21 to 30 points)					
			Microbial Score = High Contaminant/Land Use Score (12 to 20 points)					

Public Water System Name: Pioneer Mobile Home Park LLC
Public Water System Number: 3370035
Well Number: 3
Date: 4/15/2004
Person Conducting Assessment: Jessica Fox

Version 2.1
 5/19/1999

SWA Susceptibility Rating Sheet

Zone IA Susceptibility Rating	Rationale for High Susceptibility in Zone IA
<p>Warning: Due to specific conditions found in Zone IA this well has been assigned a High overall susceptibility for: No Contaminant Categories</p> <p><i>This rating is based on: (1)The presence of contaminant sources in Zone IA or (2)The detection of specific SOC/VOC chemicals in the well or (3)The detection of specific IOC chemicals above MCL levels in the well. Public Water Systems may petition IDEQ to revise susceptibility rating based on elimination of contaminant sources or other site-specific factors.</i></p>	

Community and Noncommunity- Nontransient Sources	<u>IOC</u> <u>Score</u>	<u>SOC</u> <u>Score</u>	<u>VOC</u> <u>Score</u>
Hydrologic Sensitivity Score =	5	5	5
Potential Contaminant Source/Land Use Score X 0.20 =	5	5	5
Source Construction Score =	2	2	2
Total	12	12	12
FINAL WELL RANKING IOC Ranking is Moderate (6 to 12 points) SOC Ranking is Moderate (6 to 12 points) VOC Ranking is Moderate (6 to 12 points)			

Comments

Microbial Susceptibility Rating	<u>Score</u>
Hydrologic Sensitivity Score =	5
Potential Contaminant Source/Land Use Score X 0.375 =	5
Source Construction Score =	2
Total	12
FINAL WELL RANKING Microbial Ranking is Moderate (6 to 12 points)	

Comments

Public Water System Name: Pioneer Mobile Home Park LLC

Public Water System Number: 3370035

Well Number: 4

Date: 4/15/2004

Person Conducting Assessment: Jessica Fox

Version 2.1

5/19/1999

Hydrologic Sensitivity
Worksheet

		<u>Value</u>	<u>Comments</u>
(1) Do the soils belong to drainage classes in the poorly drained through moderately well drained categories?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2	
(2) Is the vadose zone composed predominantly of gravel, fractured rock; or is unknown?	<input checked="" type="radio"/> Yes <input type="radio"/> No	1	23' of gravel
(3) Is the depth to first groundwater greater than 300 feet?	<input type="radio"/> Yes <input checked="" type="radio"/> No	1	depth to first groundwater is 42'; SWL is 16'
(4) Is an aquitard present with silt/clay or sedimentary interbeds within basalt with greater than 50 feet cumulative thickness?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2	22' of cumulative brown and blue clay from surface to end of casing

Hydrologic Sensitivity Score = 6

Final Hydrologic Sensitivity Ranking = High Hydrologic Sensitivity Score (5 to 6 points)

Public Water System Name: Pioneer Mobile Home Park LLC
 Public Water System Number: 3370035
 Well Number: 4
 Date: 4/15/2004
 Person Conducting Assessment: Jessica Fox

Version 2.1
 5/19/1999

Source Construction Worksheet

Comments

(1) Well Drill Date	Input Date	September 19, 1994		
(2) Well Drillers Log Available?	<input checked="" type="radio"/> Yes <input type="radio"/> No			If no well log is available answers to (4) and (6) are assumed to be NO and points are added to score.
(3) Sanitary Survey Available? If Yes, for what year?	<input checked="" type="radio"/> Yes <input type="radio"/> No	Year 2002		If no sanitary survey is available answer to Questions (5) and (8) is assumed to be NO and points are added to score.
(4) Are current IDWR well construction standards being met?	<input type="radio"/> Yes <input checked="" type="radio"/> No		<u>Value</u> 1	6" casing is 0.250 inches thick, should be 0.280 inches thick.
(5) Is the wellhead and surface seal maintained in good condition?	<input checked="" type="radio"/> Yes <input type="radio"/> No		0	
(6) Do the casing and annular seal extend to a low permeability unit?	<input type="radio"/> Yes <input checked="" type="radio"/> No		2	Surface seal extends into gravel; casing extends into blue clay.
(7) Is the highest production interval of the well at least 100 feet below the static water level?	<input type="radio"/> Yes <input checked="" type="radio"/> No		1	Open hole is 37' below SWL
(8) Is the well located outside the 100 year floodplain and is it protected from surface runoff?	<input checked="" type="radio"/> Yes <input type="radio"/> No		0	

Source Construction Score = 4

Final Source Construction Ranking = Moderate Source Construction Score (2 to 4 points)

Potential Contaminant Source/Land Use Worksheet continued									
Zone II						IOC Score	VOC Score	SOC Score	Microbial Score
(9)	Are Contaminant Sources Present in Zone II?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Complete Step 9a					
9a	What types of chemicals?	<input checked="" type="checkbox"/> IOCs	<input checked="" type="checkbox"/> VOCs		2	2	2	0	
		<input checked="" type="checkbox"/> SOCs							
(10)	Are there Sources of Class II or III Leachable Contaminants in Zone II?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Complete Step 10a					
10a	What type of contaminant?	<input checked="" type="checkbox"/> IOCs	<input checked="" type="checkbox"/> VOCs		1	1	1	0	
		<input checked="" type="checkbox"/> SOCs							
(11)	Pick the Best Description of the Amount and Type of Agricultural Land in Zone II.	Greater Than 50 % Irrigated Agricultural Land			▼	2	2	2	0
		Zone II Subtotal				5	5	5	0

Potential Contaminant Source/Land Use Worksheet continued								
Zone III					IOC Score	VOC Score	SOC Score	Microbial Score
(12)	Contaminant Sources Present in Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No		Complete Step 12a				
12a	What types of contaminant?	<input checked="" type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs			1	1	1	0
(13)	Are there Sources of Class II or III Leachable Contaminants in Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No		Complete Step 13a				
13a	What types of contaminants?	<input checked="" type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs			1	1	1	0
(14)	Is there Irrigated Agricultural Land That Occupies > 50% of Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No			1	1	1	0
			Zone III Subtotal		3	3	3	0
					IOC Score	VOC Score	SOC Score	Microbial Score
Community and Non-Community, Non-Transient System Contaminant Source/Land Use Score					26	24	26	12
Final Community/NC-NT System Ranking			IOC Score = High Contaminant/Land Use Score (21 to 30 points)					
			VOC Score = High Contaminant/Land Use Score (21 to 30 points)					
			SOC Score = High Contaminant/Land Use Score (21 to 30 points)					
			Microbial Score = Moderate Contaminant/Land Use Score (11 to 20 points)					

Public Water System Name: Pioneer Mobile Home Park LLC
Public Water System Number: 3370035
Well Number: 4
Date: 4/15/2004
Person Conducting Assessment: Jessica Fox

Version 2.1
5/19/1999

SWA Susceptibility Rating Sheet

Zone IA Susceptibility Rating		<u>Rationale for High Susceptibility in Zone IA</u>
Warning: Due to specific conditions found in Zone IA this well has been assigned a High overall susceptibility for: No Contaminant Categories <i>This rating is based on: (1)The presence of contaminant sources in Zone IA or (2)The detection of specific SOC/VOC chemicals in the well or (3)The detection of specific IOC chemicals above MCL levels in the well. Public Water Systems may petition IDEQ to revise susceptibility rating based on elimination of contaminant sources or other site-specific factors.</i>		

Community and Noncommunity- Nontransient Sources	<u>IOC Score</u>	<u>SOC Score</u>	<u>VOC Score</u>
Hydrologic Sensitivity Score =	6	6	6
Potential Contaminant Source/Land Use Score X 0.20 =	5	5	5
Source Construction Score =	4	4	4
Total	15	15	15
FINAL WELL RANKING			
IOC Ranking is High (13 to 18 points)			
SOC Ranking is High (13 to 18 points)			
VOC Ranking is High (13 to 18 points)			

Comments

Microbial Susceptibility Rating	<u>Score</u>
Hydrologic Sensitivity Score =	6
Potential Contaminant Source/Land Use Score X 0.375 =	5
Source Construction Score =	4
Total	15
FINAL WELL RANKING	
Microbial Ranking is High (13 to 18 points)	

Comments

Public Water System Name: Pioneer Mobile Home Park LLC

Public Water System Number: 3370035

Well Number: 5

Date: 4/15/2004

Person Conducting Assessment: Jessica Fox

Version 2.1

5/19/1999

Hydrologic Sensitivity
Worksheet

		<u>Value</u>	<u>Comments</u>
(1) Do the soils belong to drainage classes in the poorly drained through moderately well drained categories?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2	
(2) Is the vadose zone composed predominantly of gravel, fractured rock; or is unknown?	<input type="radio"/> Yes <input checked="" type="radio"/> No	0	39' of clay
(3) Is the depth to first groundwater greater than 300 feet?	<input type="radio"/> Yes <input checked="" type="radio"/> No	1	depth to first groundwater is 70'; SWL is 17'
(4) Is an aquitard present with silt/clay or sedimentary interbeds within basalt with greater than 50 feet cumulative thickness?	<input type="radio"/> Yes <input checked="" type="radio"/> No	2	19' of blue clay from surface to end of casing

Hydrologic Sensitivity Score = 5

Final Hydrologic Sensitivity Ranking = High Hydrologic Sensitivity Score (5 to 6 points)

Public Water System Name: Pioneer Mobile Home Park LLC
 Public Water System Number: 3370035
 Well Number: 5
 Date: 4/15/2004
 Person Conducting Assessment: Jessica Fox

Version 2.1
 5/19/1999

Source Construction Worksheet

Comments

(1) Well Drill Date	Input Date	<div>March 1, 1996</div>		
(2) Well Drillers Log Available?	<div><input checked="" type="radio"/> Yes <input type="radio"/> No</div>			If no well log is available answers to (4) and (6) are assumed to be NO and points are added to score.
(3) Sanitary Survey Available? If Yes, for what year?	<div><input checked="" type="radio"/> Yes <input type="radio"/> No</div>	<div>Year 2002</div>		If no sanitary survey is available answer to Questions (5) and (8) is assumed to be NO and points are added to score.
(4) Are current IDWR well construction standards being met?	<div><input type="radio"/> Yes <input checked="" type="radio"/> No</div>		<u>Value</u> 1	6" casing is 0.250 inches thick, should be 0.280 inches thick.
(5) Is the wellhead and surface seal maintained in good condition?	<div><input checked="" type="radio"/> Yes <input type="radio"/> No</div>		0	
(6) Do the casing and annular seal extend to a low permeability unit?	<div><input type="radio"/> Yes <input checked="" type="radio"/> No</div>		2	Surface seal extends into gravel and sand; casing extends into blue clay.
(7) Is the highest production interval of the well at least 100 feet below the static water level?	<div><input type="radio"/> Yes <input checked="" type="radio"/> No</div>		1	Open hole is 33' below SWL
(8) Is the well located outside the 100 year floodplain and is it protected from surface runoff?	<div><input checked="" type="radio"/> Yes <input type="radio"/> No</div>		0	

Source Construction Score = 4

Final Source Construction Ranking = Moderate Source Construction Score (2 to 4 points)

[illegible]

Potential Contaminant Source/Land Use Worksheet continued									
<u>Zone III</u>						IOC Score	VOC Score	SOC Score	Microbial Score
(12)	Contaminant Sources Present in Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No			Complete Step 12a				
12a	What types of contaminant?	<input checked="" type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs				1	1	1	0
(13)	Are there Sources of Class II or III Leachable Contaminants in Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No			Complete Step 13a				
13a	What types of contaminants?	<input checked="" type="checkbox"/> IOCs <input checked="" type="checkbox"/> VOCs <input checked="" type="checkbox"/> SOCs				1	1	1	0
(14)	Is there Irrigated Agricultural Land That Occupies > 50% of Zone III?	<input checked="" type="radio"/> Yes <input type="radio"/> No				1	1	1	0
			Zone III Subtotal			3	3	3	0
						IOC Score	VOC Score	SOC Score	Microbial Score
Community and Non-Community, Non-Transient System Contaminant Source/Land Use Score						26	24	26	12
Final Community/NC-NT System Ranking			IOC Score = High Contaminant/Land Use Score (21 to 30 points)						
			VOC Score = High Contaminant/Land Use Score (21 to 30 points)						
			SOC Score = High Contaminant/Land Use Score (21 to 30 points)						
			Microbial Score = High Contaminant/Land Use Score (11 to 20 points)						

Public Water System Name: Pioneer Mobile Home Park LLC
 Public Water System Number: 3370035
 Well Number: 5
 Date: 4/15/2004
 Person Conducting Assessment: Jessica Fox

Version 2.1
 5/19/1999

SWA Susceptibility Rating Sheet

Zone IA Susceptibility Rating		<u>Rationale for High Susceptibility in Zone IA</u>
Warning:	Due to specific conditions found in Zone IA this well has been assigned a High overall susceptibility for:	
	SOC Contaminants	Di(2-ethylhexyl)-phthalate (an SOC) was detected in Well #5.
<i>This rating is based on: (1)The presence of contaminant sources in Zone IA or (2)The detection of specific SOC/VOC chemicals in the well or (3)The detection of specific IOC chemicals above MCL levels in the well. Public Water Systems may petition IDEQ to revise susceptibility rating based on elimination of contaminant sources or other site-specific factors.</i>		

Community and Noncommunity- Nontransient Sources	<u>IOC Score</u>	<u>SOC Score</u>	<u>VOC Score</u>
Hydrologic Sensitivity Score =	5	5	5
Potential Contaminant Source/Land Use Score X 0.20 =	5	5	5
Source Construction Score =	4	4	4
Total	14	14	14
FINAL WELL RANKING			
IOC Ranking is High (13 to 18 points)			
SOC Ranking is High (13 to 18 points)			
VOC Ranking is High (13 to 18 points)			

Comments

Microbial Susceptibility Rating	<u>Score</u>
Hydrologic Sensitivity Score =	5
Potential Contaminant Source/Land Use Score X 0.375 =	5
Source Construction Score =	4
Total	14
FINAL WELL RANKING	
Microbial Ranking is High (13 to 18 points)	

Comments